

Application No. 10/642,197
Attorney Docket: MA-581-US (MAT.023)

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AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A node in an Ethernet network to relay ~~an~~ a modified Ethernet frame, comprising:

an element which inserts two or more VLAN tags into said frame and removes an other ~~said-inserted~~ VLAN tag in a relay process of said frame,

wherein said frame comprises an Ethernet frame, as modified such that network control information is selectively stored to said VLAN tags and said network control information is not restricted to a 64-byte minimum frame size restriction of network control information, as defined by a standard of said Ethernet.
2. (Previously presented) A node as set forth in claim 1, further comprising:

an element which replaces two or more VLAN tags of said frame at a time.
3. (Previously presented) A node as set forth in claim 1, further comprising:

an element which administrates said two or more VLAN tags using a forwarding table memory for a change of frame contents during a frame relay.
4. (Previously presented) A node as set forth in claim 1, further comprising:

an element which searches a forwarding table memory using an information from two or more VLAN tags in said frame during a frame relay.

Application No. 10/642,197
Attorney Docket: MA-581-US (MAT.023)

5. (Previously presented) A node as set forth in claim 1, further comprising:

an element which searches a forwarding table memory in a relay process of said frame with a combination of an information from two or more VLAN tags in said frame and an input port, a destination MAC address, a source MAC address and a TYPE field information.
6. (Previously presented) A node as set forth in claim 1, further comprising an element which:

provides a TTL area to show a survival time of a frame in said VLAN tag inserted to said frame;

checks whether said survival time has elapsed or not by a value in said TTL area; and

discards said frame after elapse of said survival time without relaying said frame in a relay process of said frame.
7. (Previously presented) A node as set forth in claim 6, further comprising:

an element which decrements the value in said TTL area by one every time said frame is relayed.
8. (Cancelled)
9. (Previously presented) A node as set forth in claim 1, further comprising:

an element which changes a self-node status administration corresponding to a content of said VLAN tag.

Application No. 10/642,197
Attorney Docket: MA-581-US (MAT.023)

10. (Previously presented) A node as set forth in claim 1, wherein
a node status is stored to an area of said VLAN tag in the relayed frame corresponding
to a self-node status.

11. (Currently amended) A frame transfer method of a node to relay an Ethernet-like
frame, said method comprising:
receiving, in said node, an Ethernet-like frame in said node, said Ethernet-like frame
comprising an Ethernet frame as modified such that network control information can
selectively be stored to said VLAN tag and said network control information is not restricted
to a 64-byte minimum frame size restriction of network control information, as defined by a
standard of said Ethernet;

inserting two or more VLAN tags to said Ethernet frame at a time or removing said
inserted VLAN tags; and
forwarding said Ethernet frame.

12. (Previously presented) A frame transfer method as set forth in claim 11, wherein
a forwarding table memory for frame contents change during a frame relay is used for
administration of said two or more VLAN tags.

13. (Previously presented) A frame transfer method as set forth in claim 11, wherein
a forwarding table memory is searched during a frame relay using an information
from two or more VLAN tags in said frame.

Application No. 10/642,197
Attorney Docket: MA-581-US (MAT.023)

14. (Previously presented) A frame transfer method as set forth in claim 11, wherein
a forwarding table memory is searched in a relay process of said frame with a
combination of an information from two or more VLAN tags in said frame and an input port,
a destination MAC address, a source MAC address and a TYPE field information.

15. (Previously presented) A frame transfer method as set forth in claim 11, wherein:
a TTL area to show a survival time of the frame is provided in said VLAN tag that is
inserted to said frame;
whether said survival time has been elapsed or not is checked by a value in said TTL
area; and
said frame after elapse of said survival time is discarded without being relayed in the
relay process of said frame.

16. (Previously presented) A frame transfer method as set forth in claim 15, wherein
the value in said TTL area is decremented by one every time said frame is relayed.

17. (Cancelled)

18. (Previously presented) A frame transfer method as set forth in claim 11, further
comprising:
changing a self-node status administration corresponding to contents of said VLAN
tag.

Application No. 10/642,197
Attorney Docket: MA-581-US (MAT.023)

19. (Previously presented) A frame transfer method as set forth in claim 11, wherein
a node status is stored to said VLAN tag area in the relayed frame corresponding to a
self-node status.

20. (Currently amended) The node of claim 8 1, wherein said network control information
comprises 32-bit network control tags.